

**Notice of Allowability**

Application No.

10/661,559

Examiner

Craig A. Renner

Applicant(s)

CHOI ET AL.

Art Unit

2652

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to paper(s) filed 07 March 2006.
2. ☒ The allowed claim(s) is/are 1 and 5-26 (renumbered 1-23, respectively).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                     |                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)                                                    | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance                        |
|                                                                                                                     | 9. <input type="checkbox"/> Other _____                                                          |

1. Claim 1 is allowable over the prior art of record. The restriction requirement among the inventions of groups I-VI, as set forth in the Office action mailed on 13 July 2005, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim.** Claims 10-26, directed to the inventions of groups II-VI, are no longer withdrawn from further consideration because they require all the limitations of an allowable generic linking claim as required by 37 CFR 1.141.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim(s) presented in a continuation or divisional application include all the limitations of a claim that is allowable in the present application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Marcus R. Mickney on 09 March 2006.

3. The application has been amended as follows:

IN THE CLAIMS:

The claim listing has been amended to read as follows:

1. (Currently Amended) A deck mechanism for a magnetic recording/reproducing apparatus, comprising:
  - a main deck provided with a head drum and a capstan motor;
  - a sub-deck installed on the main deck to be loaded/unloaded, the sub-deck being provided with a pair of reel discs, onto which tape reels of a tape cassette are seated, respectively;
  - a pole base loading unit for taking out and guiding a tape to be in contact with a side of the head drum when the sub-deck is loaded, the pole base loading unit further comprising:
    - a pair of pole base assemblies mounted to be capable of reciprocating on the main deck, the pole base assemblies moving the tape as it is being loaded to come into contact with the head drum;
    - a guide rail provided on a rail plate mounted on the main deck, for guiding movement of the pole base assemblies;
    - a pair of loading gears mounted on the rail plate to be capable of being rotated, the loading gears being engaged with each other and connected to the main cam gear, wherein the loading gears comprise:

a first loading gear fitted on the bottom side of the rail plate to be capable of being rotated; and

a second loading gear fitted on the rail plate and provided with a small gear section engaged with the first loading gear and a large gear section connected to ~~the~~ a main cam gear; and

a pair of link units for linking the loading gears to the pole base assemblies, respectively;

a pinch roller unit for compressing the tape against a spindle of the capstan motor when the sub-deck is loaded;

a brake unit for selectively braking one of the reel discs;

a main sliding member mounted on the main deck to be capable of reciprocatingly sliding, the main sliding member controlling the driving of the pinch roller unit; and

the ~~the~~ [[a]] main cam gear mounted on the main deck to be capable of rotating, the main cam gear allowing all of the sub-deck, the pole base loading unit, the brake unit, and the main sliding member to perform linked movements while the main cam gear is rotationally driven.

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Previously Presented) The deck mechanism according to claim 1, wherein the large gear section is formed in a position lower than the small gear section, so that a step is formed therebetween, and the large gear section has a radius larger than that of the small gear section.

6. (Previously Presented) The deck mechanism according to claim 1, wherein the large gear section is provided in such a manner that gear teeth are projected only from a predetermined area on the circumference of the second loading gear, whereby the large gear section is engaged with the main cam gear only in the predetermined area.

7. (Previously Presented) The deck mechanism according to claim 6, wherein a pair of large gear valleys, which are relatively deep as compared to neighboring gear valleys, are formed in the large gear section, the large gear valleys respectively positioned at the opposite ends of the larger gear section, respectively, to start engagement with the main cam gear according to the rotating directions of the main cam gear, and a pair of large teeth, which are relatively highly projected as compared to neighboring gear teeth, are formed in the main cam gear, the large gear teeth positioned to correspond to the large gear valleys.

8. (Original) The deck mechanism according to claim 7, wherein the large gear teeth are formed in a position lower than the other gear teeth formed all over the circumference of the main cam gear.

9. (Previously Presented) The deck mechanism according to claim 6, wherein the main cam gear comprises:

a main gear part formed all over the circumference to receive power;

a connection gear part formed in a position lower than the main gear part to be connected with the gear teeth of the large gear section;

a pair of large gear teeth respectively formed in the leading and trailing parts of the connection gear part to be larger than the remaining gear teeth of the connection gear part; and

a sliding wing portion formed to be projected in a circular arc shape of a predetermined length in a place laid out from the connection gear part and the large gear teeth and lower than the main gear part, the sliding wing portion slidably contacted with the circumference of the large gear section.

10. (Previously Presented) The deck mechanism according to claim 1, wherein the pinch roller unit comprises:

a pivot lever rotatably mounted on the main deck and rotated toward the spindle of the capstan motor in cooperation with the sub-deck as being loaded;

a pinch roller rotatably mounted on one end of the pivot lever and coming into close contact with the spindle of the capstan motor; and

a torsion spring mounted on the pivot lever, the torsion spring being pushed and compressed by the sliding member, thereby urging the pivot lever firstly pushed by the sub-deck against the spindle of the capstan motor.

11. (Original) The deck mechanism according to claim 10, wherein one end of the torsion spring is downwardly bent toward the main sliding member side, and a compression projection is upwardly projected from the main sliding member to come into contact with and compress the one end of the torsion spring.

12. (Original) The deck mechanism according to claim 10, wherein, when the torsion spring is loaded along with the pivot lever, the main sliding member is reciprocated for a predetermined distance one time so that it does not interfere with the movement of the torsion spring.

13. (Original) The deck mechanism according to claim 11, wherein, when the loading of the torsion spring is completed, one end of the torsion spring is positioned in the moving area of the compression projection, so that the torsion spring is capable of being contacted with and compressed by the compression projection when the main sliding member moves.

14. (Currently Amended) The deck mechanism according to claim [[14]]  
1, wherein the main cam gear is formed with a main cam slot in a predetermined length  
and shape, the main cam slot allowing the main sliding member to be linked thereby  
controlling the reciprocation movements of the main sliding member.

15. (Original) The deck mechanism according to claim 14, wherein the  
main cam slot is formed on the bottom surface of the main cam gear.

16. (Original) The deck mechanism according to claim 1, wherein the  
brake unit comprises:

a first brake pivotally installed on the sub-deck, the first brake being contacted  
with and spaced from the one reel disc;

a spring for compressing the first brake to be contacted with the one reel disc;

a second brake installed coaxial to the first brake, the second brake being rotated  
with the first brake in one direction, in which the first brake is spaced from the one reel  
disc, and being independently rotated in the other direction opposite to the one direction  
to come into contact with the one reel disc; and

a torsion spring for compressing the second brake to be contacted with the one  
reel disc, wherein each of the first and second brakes is selectively contacted and linked  
with the main cam gear when the sub-deck is loaded, thereby being separated  
from/contacted with the one reel disc.



17. (Original) The deck mechanism according to claim 16, wherein the first and second brakes are formed with first and second guide pins projected from the bottom sides thereof, respectively, the first and second guide pins being contacted with and guided by the main cam gear.

18. (Original) The deck mechanism according to claim 17, wherein the main cam gear is provided with a guide slot for sequentially guiding the first and second guide pins in a predetermined area in the rotational direction of the main cam gear.

19. (Original) The deck mechanism according to claim 18, wherein the guide slot is formed in the predetermined area on the top surface of the main cam gear, and the first and second guide pins are sequentially entered in and spaced from the guide slot at the time of loading/unloading the first and second guide pins, thereby being selectively guided.

20. (Original) The deck mechanism according to claim 16, wherein the one reel disc is the supply side reel disk that is adjacent to the main cam gear.

21. (Original) The deck mechanism according to claim 1, further comprising a reel cover installed on the top side of the sub-deck, for supporting the brake unit.

22. (Original) The deck mechanism according to claim 1, wherein the sub-deck is formed with a cam slot in a predetermined shape and the cam slot is capable of cooperating with and moving a projection pin projected from the main cam gear at the time that loads/unloads the main cam gear.

23. (Original) The deck mechanism according to claim 1, further comprising a mode switch for sensing various operation modes including the loading/unloading of the sub-deck, the mode switch being adapted to cooperate with the main cam gear.

24. (Original) The deck mechanism according to claim 23, wherein the mode switch comprises:

an elastic brush installed under the main cam gear and provided with a plurality of contact pins; and

an FPC provided with a mode-sensing pattern in a predetermined shape, in which the elastic brush is contacted with the mode-sensing pattern and the FPC faces the bottom surface of the cam gear.

25. (Original) The deck mechanism according to claim 24, wherein the bottom surface of the main cam gear is provided with an accommodation recess for accommodating and supporting the elastic brush.

26. (Previously Presented) The deck mechanism according to claim 1, wherein the main cam gear comprises:

a disc-shaped body rotatably installed on the top surface of the main deck;

gear teeth formed on the circumference of the body in a predetermined shape to cooperate with the pole base loading unit;

a cam slot formed on the bottom surface of the body and cooperating with the main sliding member to reciprocate the main sliding member;

a guide slot formed on the top surface of the body and cooperating with the brake unit to drive the brake unit; and

a projection pin projected from the top surface of the body and cooperating with the sub-deck to load/unload the sub-deck.

IN THE SPECIFICATION:

a. The paragraph beginning at line 27 on page 8 has been amended to read as follows:

Throughout the drawing figures, it will be understood that like numerals refer to like ~~reatures~~ features and structures.

b. The paragraph beginning at line 19 on page 10 has been amended to read as follows:

The loading gears, i.e., the first and second loading gears 340, 350 are rotatably mounted on the rail plate 330 and connected with each other. In addition, the first loading gear 340 is engaged with the main cam gear 700 to receive power from the main cam gear 700. The first loading gear 340 is connected to the pole base assembly 310 by way of the ~~first~~ first link unit 360 and the second loading gear 350 is connected to the pole base assembly 320 by way of the second link unit 370. The first loading gear 340 comprises a first gear section 341 engaged with the second loading gear 350 and a second gear section 343 selectively engaged with the main cam gear 700. The first and second gear sections 341, 343 are provided in different heights in a stepped manner. That is, the first gear section 341 is preferably located higher than the second gear section 343. And, the first gear section 341 has a radius smaller than that of the second gear section 343.

c. The paragraph beginning at line 8 on page 11 has been amended to read as follows:

Each of the first and second link units 360, 370 comprises a first link member 361; 371 connected to any of the loading gears 340, 350, a second link member 363; 373 for connecting the first link member 361; 371 ~~367~~ to any of the pole base assemblies 310, 320. Here, the link members 361, 371 are integrally formed with the loading members 340, 350 in an elongate rod shape, respectively. And, the one ends of the first link members 361, 371 and the second link members 363, 373 are hingedly connected. That is, the first link members 361, 371 are formed to be projected from sides of the loading gears 340, 350, respectively, where by one ends of the first link members 361, 371 are fixed to the loading gears 340, 350, respectively and the other ends are hingedly connected to the second link members 363, 373, respectively. Such first links 361, 371 are preferably formed from a material capable of being bent by an external force and being returned to its original shape. Further, the second link members 363, 373 are hingedly connected to the pole bases 311, 321 at the other ends thereof, respectively.

d. The last two amendments appearing on page 4 of the amendment filed 30 January 2006 have not been entered as there is no "paragraph [0075]" and as there is no paragraph "which starts with 'Under normal circumstances'."

Art Unit: 2652

IN THE TITLE:

The title has been amended to read as follows:

--TAPE DECK MECHANISM WITH MAIN CAM GEAR MOVING SUB-DECK, POLE  
BASE LOADING UNIT, BRAKE UNIT AND MAIN SLIDING MEMBER--.

Art Unit: 2652

IN THE ABSTRACT:

The abstract has been amended to read as follows:


ABSTRACT OF THE DISCLOSURE

A deck mechanism for a magnetic recording/reproducing apparatus comprises a main deck provided with a head drum, ~~and a capstan motor,~~ and ~~[[,]]~~ a sub-deck installed on the main deck to be loaded/unloaded, ~~[[,]]~~ The ~~the~~ sub-deck is ~~being~~ provided with a pair of reel discs, onto which tape reels of a tape cassette are seated; a pole base loading unit ~~for taking out and guiding a tape to be in contact with a side of the head drum when the sub-deck is loaded and guides;~~ a pinch roller unit for compressing the tape against a spindle of the capstan motor when the sub-deck is loaded; a brake unit ~~for selectively braking one of the roll discs;~~ a main sliding member mounted on the main deck to be capable of reciprocatingly sliding, the main sliding member controlling the driving of the pinch roller unit; and a main cam gear mounted on the main deck, ~~to be capable of rotating, the~~ The main cam gear causes ~~causing~~ ~~operating all of~~ the sub-deck, the pole base loading unit, the brake unit, and the main sliding member to perform linked movements while the main cam gear is being rotationally driven.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Craig A. Renner  
Primary Examiner  
Art Unit 2652

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